NAME _____ *DATE* _____

INSTRUCTOR _____ *PERIOD* ____ *PARTNER*_____

Unit 6: Weather

LAB 6-4: DEWPOINT AND CLOUD FORMATION

INTRODUCTION: Cumulus clouds are our "puffy" fair weather clouds. They are often flat on the bottom and rounded on top. The distance from Earth's surface to the bottom of these clouds is often the same for a large group of them. Clouds can only form if a specific temperature, called the **dewpoint**, is reached. Since the air temperature decreases with height above Earth's surface, clouds may form if the air temperature is cold enough to be at the dewpoint at some altitude.

OBJECTIVE: In this lab you will study the relationship between the dewpoint temperature and the height above Earth's surface at which clouds form.

VOCABULARY:

dewpoint temperature:

psychrometer:

wet-bulb depression:

cloud base:

PROCEDURE A:

Refer to the Dewpoint Temperature Chart in the Appendix to answer questions 1 through 3.

1. What is the wet-bulb depression if the dry-bulb temperature is 20°C and the wet-bulb is 17°C? _____
2. What is the dewpoint temperature if the dry-bulb is 16°C and the wet-bulb depression is 5°C? _____
3. What is the dewpoint temperature if the dry-bulb temperature is 24°C and the wet-bulb temperature is 20°C? _____

PROCEDURE C:

Use the information given on Report Sheet 1 to determine the dewpoint temperatures and cloud base altitudes.

REPORT SHEET #1

	(1)	(2)	(3)
DRY-BULB TEMPERATURE	20°C	4°C	28°C
WET-BULB TEMPERATURE	12°C	–1°C	19°C
WET-BULB DEPRESSION			
DEWPOINT TEMPERATURE			
CLOUD BASE ALTITUDE			

PROCEDURE D:

1. Go outside and use a sling psychrometer to measure the wet and dry-bulb temperatures. Record these data on the Report Sheet #2.
2. Complete Report Sheet #2 by determining and entering the wet-bulb depression and the dewpoint temperature.
3. Using the dry-bulb and dewpoint temperatures determined above, use the Generalized Graph for Determining Cloud Base Altitude to find the cloud base altitude for this day. Record this altitude on Report Sheet #2. Be sure to draw lines on Chart #1 showing the dry-bulb temperature and the dewpoint temperature coming together.

REPORT SHEET #2

DRY-BULB TEMPERATURE: _____ °C

WET-BULB TEMPERATURE: _____ °C

WET-BULB DEPRESSION: _____ °C

DEWPOINT TEMPERATURE: _____ °C

CLOUD BASE ALTITUDE: _____ km